

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002474**Date Inspected:** 26-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhao Chen Sun, See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** See Below**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector, M. Paul Stovall, was present at Zhenhua Port Machinery Company (ZPMC) on Changxing Island, Shanghai, China for the purpose of monitoring Quality Control (QC) functions during the fabrication of the Self Anchored Suspension (SAS) section of the San Francisco/Oakland Bay Bridge.

New Tower Shop

The QA Inspector observed ZPMC personnel drilling boltholes into assembled and welded Struts.

The QA Inspector observed ZPMC personnel Heat Straightening various Skin plates and cutting bevels onto other Tower Skin plates using the horizontal mill.

The QA Inspector observed ZPMC personnel fit and tack weld the first production Skin plate splice on Plate 150(S) and Plate 191 (S). This is weld number SSD1-SA16-F/G-48A. The ZPMC welder is Zha Yongsong, ID #056134. ZPMC QC personnel are present and monitoring the work.

Bay 2

The QA Inspector observed ZPMC personnel drilling bolt holes in diagonal tube steel (TS) braces to be used with the Orthotropic Box Girder (OBG) Floor Beams. ZPMC personnel are cutting coupons from Skin C of the 77-meter Mock-Up for macro-etch samples. Caltrans personnel selected the areas where ZPMC personnel will

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take these.

Bay 3

The QA Inspector observed ZPMC personnel fit and tack weld WT stiffeners onto Bottom Plates (BP) and Side Plates (SP). This work observed was on BP164-001 and SP331-01. The welders doing this work are Zhang Feng, ID #049769, and Li Wenguo, ID #066261.

ZPMC welder Li Sheqiang, ID #053605 and Li Zhaoqian, ID #048810, were observed by the QA Inspector welding Complete Joint Penetration (CJP) welds on W21 x 57's which will later be cut into WT stiffeners.

Bay 4

The QA Inspector observed ZPMC personnel continuing to weld on Internal Tower Diaphragm plate weld joint ESD1-SA287-3A and 4A. The ZPMC Certified Welding Inspector (CWI) Zhao Chen Sun was monitoring the preheat temperature as welding progressed. Welding progressed throughout the day. The WPS used for Submerged Arc Welding (SAW) was WPS-B-T-3221-B-U3c-5-1. The QA Inspector checked the WPS parameters at different times and recorded 617 amps, 29.9 volts; and 623 amps, 30.4 volts.

The QA Inspector observed repair welding has started on Internal Tower Diaphragm plate weld number SSD1-SA27-1A. ZPMC welder is Dai Lu, ID #048659 was observed performing the welding using WPS-485-REPAIR-SMAW-1G.

The QA Inspector observed Heat Straightening in process on various Tower Diaphragm Plates.

The QA Inspector witnessed ZPMC QC do an Ultrasonic Test (UT) on Internal Tower Diaphragm plate splice SSD1-SA335-1B. The QA Inspector observed the QC Inspector performing the UT had several high amplitude indications. When asked by QA inspector as to the disposition of these indications the QC Inspector tapped his finger near to where he was working indicating the he was using "finger dampening." The QA Inspector informed an ABF QC Inspector near by of this observation. Later the part was tuned over to side "A" and ZPMC personnel started grinding the toe of the weld.

Bay 7

The QA Inspector observed ZPMC QC personnel perform Magnetic Particle Tests (MT) on FB016-03-009, FB015-03-001 and 009, FB016-02-03, FB014-01-045, and FB014-04-042. The work was conducted using CWR-040 and appeared to meet the contract requirements.

The QA Inspector observed ZPMC personnel fit and tack weld stiffener plates on FB022-02 and ZPMC personnel using an acetylene torch to trim FB018-02 and FB022-02 to size.

Bay 8

The QA Inspector observed ZPMC personnel fit 38-meter elevation Internal Tower Diaphragm plates P207 and

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SA265

ZPMC personnel were observed welding 48-meter elevation Diaphragm Plate splice SSD1-SA270 using the SAW process in accordance with WPS-B-T-3221-B-U3c-5-1.

Summary of Conversations:

The QA Inspector had conversations with ABF QC personnel in regards to the improvements that ZPMC is showing in regards to weld joint preheat and interpass temperatures and them being able to maintain it by aggressively monitoring the material temperature.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Stovall,Paul	Quality Assurance Inspector
Reviewed By:	Hager,Craig	QA Reviewer
